Amendments to the Claims

This listing will replace all prior versions and listings of claims in the application:

Listing of Claims

Claims 1 to 29. (canceled)

Claim 30. (currently amended) A method of forming an electrical interconnect structure on a substrate, comprising:

providing a first porous dielectric layer having a surface region, wherein said porous dielectric layer is filled with porogen~~with~~ and wherein said porogen has been removed only from said surface region of said first porous dielectric layer ~~from which porogen has been removed~~; and

forming an etch stop layer upon said first porous dielectric layer so that said etch stop layer extends to partially fill pores only in the surface region of said first porous dielectric layer from which said porogen has been removed.

Claim 31. (canceled)

Claim 32. (currently amended) The method of claim ~~31~~30, wherein the porogen is removed by heating.

Claim 33. (original) The method of claim 30, wherein the porogen is removed by baking in a hot plate bake chamber.

Claim 34. (original) The method of claim 30, further comprising forming a second porous dielectric layer upon said etch stop layer.

Claim 35. (original) The method of claim 34, wherein at least one of the first porous dielectric layer and the second porous dielectric layer is comprised of an organic dielectric material.

Claim 36. (original) The method of claim 34, further comprising forming porosity in at least one of the first porous dielectric layer and the second porous dielectric layer by decomposition of a sacrificial porogen initially in said layers.

Claim 37. (previously presented) The method of claim 34, wherein at least one of the first porous dielectric layer and the second porous dielectric layer is comprised of same or different porous dielectric material.

Claim 38. (original) The method of claim 34, wherein the first porous dielectric layer has a thickness in the range of substantially 600 - 5000 Angstroms.

Claim 39. (original) The method of claim 34, wherein the second porous dielectric layer has a thickness in the range of substantially 600 - 5000 Angstroms.

Claim 40. (original) The method of claim 34, wherein said etch stop layer is comprised of a material with etch selectivity to the porous dielectric layers.

Claim 41. (previously presented) The method of claim 34, wherein said etch stop layer is selected from the group consisting of organo silsesquioxanes, hydrido silsesquioxanes, hydrido-organo silsesquioxanes, and siloxanes.

Claim 42. (previously presented) The method of claim 34, wherein the etch stop layer has a thickness of substantially 200 - 600 Angstroms.

Claim 43. (original) The method of claim 34, further comprising forming a metal via in the first porous dielectric layer.

Claim 44. (original) The method of claim 34, further comprising forming a metal line in the second porous dielectric layer.

Claim 45. (original) The method of claim 34, further comprising forming a plurality of patterned metal conductors within a multi layer stack of porous dielectric layers on the substrate, said stack including at least the first porous dielectric layer, said etch stop layer, and the second porous dielectric layer.

Claim 46. (original) The method of claim 45, further comprising:

adding additional dielectric layers; and

completing the structure by adding conductors.

Claim 47. (original) The method of claim 46, further comprising curing the dielectric layers to render the dielectric layer porous.

Claim 48. (original) The method of claim 47, wherein said first porous dielectric, said etch stop, and said second porous dielectric layers in the stack are cured in a single step.

Claim 49. (original) The method of Claim 48, wherein said curing is a furnace curing step conducted at a temperature of from about 300°C to about 450°C for about 15 minutes to about 3 hours.

Claim 50. (original) The method of claim 47, wherein remaining porogen from the first and second porous dielectric layers is removed during said curing step.

Claim 51. (currently amended) The method of claim 47, wherein the remaining porogen degrades to low molecular weight compounds and diffuses out of the layer

through free volume of the first and second porous dielectric layers and the ~~buried~~ etch stop layer during the curing step.

Claim 52. (original) The method of claim 47, wherein the dielectric layers in the stack are cured after sequential application in a single tool.

Claim 53. (original) The method of claim 52, wherein the tool is a spin coating tool containing high temperature hot plate baking chambers.

Claim 54. (original) The method of claim 45, further comprising: forming at least one of the patterned metal conductors as an electrical via.

Claim 55. (original) The method of claim 54, further comprising forming at least one of the patterned metal conductors as a line connected to said via.

Claim 56. (original) The method of claim 34, further comprising forming a hardmask layer upon said second porous dielectric layer so that said hardmask layer extends to partially fill pores in surface regions of said second porous dielectric layer from which said porogen has been removed.

Claim 57. (currently amended) The method of claim 34, <u>further comprising a hardmask layer,</u> wherein said hardmask layer is a chemical mechanical polishing polish stop layer.

Claim 58. (original) The method of claim 56, further comprising forming porosity at least one of the first porous dielectric layer and the second porous dielectric layer by decomposition of a sacrificial porogen

Claim 59. (previously presented) The method of claim 56, wherein the first porous dielectric layer and the second porous dielectric are formed of same or different porous dielectric materials.

Claim 60. (original) The method of claim 56, wherein said hardmask layer is comprised of a spin-on material with etch selectivity to the porous dielectric layers.

Claim 61. (previously presented) The method of claim 56, wherein said hardmask layer is comprised of a material selected from the group consisting of organo silsesquioxanes, hydrido silsesquioxanes, hydrido-organo silsesquioxanes, and siloxanes.

Claim 62. (original) The method of claim 56, wherein at least one of the first porous dielectric layer and the second porous dielectric layer is comprised of an organic dielectric material.

Claim 63. (original) The method of claim 56, wherein the first porous dielectric layer, the etch stop layer, the second porous dielectric layer and the hard mask layers are cured in a single step.

Claim 64. (original) The method of claim 63, wherein said curing is a furnace curing step conducted at a temperature of from about 300°C to about 450°C for about 15 minutes to about 3 hours.

Claim 65. (currently amended) The method of claim 63, wherein remaining porogen degrades to low molecular weight compounds and diffuses out of the structure through free volume of the first and second porous dielectric layers, the ~~buried~~ etch stop layer and the hard mask layer during the curing step.

Claim 66. (previously presented) The method of claim 56, wherein the hard mask layer has a thickness of substantially 300 to substantially 1000 Angstroms.

Claim 67. (currently amended) The method of claim 34, further comprising forming a polish stop layer upon- said second porous dielectric layer so that said polish

stop layer extends to partially fill pores in surface regions of said second porous dielectric layer from which said porogen has been removed.

Claim 68. (original) The method of claim 30, wherein the first porous dielectric layer is comprised of an organic dielectric material.

Claim 69. (original) The method claim 30, further comprising forming porosity in the first porous dielectric layer by ~~decomposition~~ decomposing the porogen.

Claim 70. (previously presented) The method claim 30, wherein the first porous dielectric layer is comprised of a low k dielectric material.

Claim 71. (original) The method of claim 30, wherein the first porous dielectric layer has a thickness in the range of substantially 600 - 5000 Angstroms.

Claim 72. (original) The method of claim 30, wherein said etch stop layer is comprised of a spin-on material with etch selectivity to the porous dielectric layers.

Claim 73. (previously presented) The method of claim 30, wherein said etch stop layer is comprised of a material selected from the group consisting of organo silsesquioxanes, hydrido silsesquioxanes, hydrido-organo silsesquioxanes, and siloxanes.

Claim 74. (previously presented) The method of claim 30, wherein the etch stop layer has a thickness of substantially 200 to substantially 600 Angstroms.

Claim 75. (previously presented) The method of claim 30, wherein said substrate is a semiconductor wafer having an adhesion promoter layer formed thereon.